CLAIMS:

What is claimed is:

1. A traffic management processor for selectively terminating individual traffic flows, each including any number of packets, comprising:

a queuing mechanism for queuing the packets for transmission;

means for receiving a termination instruction specifying a traffic flow to be terminated; and

means for deleting packets belonging to the specified traffic flow from the queuing mechanism.

2. The traffic management processor of Claim 1, wherein the means for deleting comprises:

a content addressable memory (CAM) device having a plurality of rows, each for storing a flow identification (ID) for a corresponding packet, the flow ID indicating which traffic flow the packet belongs to, and having an input to receive a specified flow ID from the termination instruction.

3. The traffic management processor of Claim 2, wherein the CAM device is configured to compare a specified flow ID with the packet flow ID's to generate match conditions.

4. The traffic management processor of Claim 3, wherein the means for deleting comprises:

a plurality of termination bits, each indicating whether a corresponding packet is to be deleted from the queuing mechanism.

5. The traffic management processor of Claim 4, wherein the termination bits are stored in corresponding rows of the CAM

device.

6. The traffic management processor of Claim 4, wherein the termination bits are selectively asserted in response to the match conditions.

7. A traffic management processor for selectively terminating individual traffic flows, each including any number of packets, comprising:

a departure time table having a plurality of rows, each for storing a departure time for a corresponding packet;

a instruction decoder having an input to receive a termination instruction indicating which traffic flow is to be terminated; and

a content addressable memory (CAM) device having a plurality of rows, each for storing a flow identification (ID) and a termination bit for a corresponding packet, the flow ID indicating which traffic flow the packet belongs to and the termination bit indicating whether the corresponding packet is to be deleted.

8. The traffic management processor of Claim 7, wherein each row of the CAM device is coupled to a match line and to a word line, wherein each match line is configured to selectively drive the corresponding word line.

9. The traffic management processor of Claim 7, wherein the CAM device is configured to compare a specified flow ID with the packet flow ID's to generate match conditions.

10. The traffic management processor of Claim 9, wherein the termination bits are selectively asserted in response to the

match conditions.

11. The traffic management processor of Claim 10, wherein the asserted termination bits select corresponding entries in the CAM device and in the departure time table to be deleted.

12. The traffic management processor of Claim 7, wherein the termination instruction further comprises a specified traffic type indicator that indicates which type of traffic is to be terminated.

13. A method for selectively terminating individual traffic flows, comprising:

queuing a plurality of packets, each including a flow identification (ID) indicating which traffic flow the packet belongs to;

receiving a termination instruction specifying a traffic flow to be terminated;

determining whether the queued packets belong to the traffic flow specified by the termination instruction; and

selectively deleting the queued packets in response to the determining.

14. The method of Claim 13, wherein the determining comprises:

comparing a specified flow ID with the flow ID's of the queued packets.

15. The method of Claim 14, wherein the selectively deleting comprises:

asserting a termination bit corresponding to each packet that belongs to the traffic flow specified by the termination

instruction.

16. The method of Claim 15, further comprising:

generating a next free address for queuing incoming packets in response to the asserted termination bits.

17. The method of Claim 13, wherein the termination instruction further specifies which types of traffic are to be terminated.

18. The method of Claim 17, further comprising:

ascertaining whether the queued packets are of the traffic type specified by the termination instruction; and

selectively deleting the queued packets in response to the ascertaining.

19. The method of Claim 18, wherein the ascertaining comprises:

comparing a traffic type indicator specified by the termination instruction with a traffic type indicator for each queued packet.

20. A method for selectively terminating individual traffic flows, comprising:

queuing a plurality of packets, each including a flow identification (ID) indicating which traffic flow the packet belongs to;

receiving a termination instruction indicating which traffic flow is to be deleted;

comparing a specified flow ID with the flow ID's of the queued packets to generate match conditions;

selectively asserting a termination bit for each queued

packet in response to the match conditions; and

selectively deleting the queued packets in response to the termination bits.

21. The method of Claim 20, further comprising:

generating a next free address for queuing incoming packets in response to the termination bits.

22. The method of Claim 20, wherein the termination instruction further specifies which types of traffic are to be terminated.

23. The method of Claim 22, further comprising:

determining whether the queued packets are of the traffic type specified by the termination instruction; and

selectively deleting the queued packets in response to the determining.

24. The method of Claim 23, wherein the determining comprises:

comparing a traffic type indicator specified by the termination instruction with a traffic type indicator for each queued packet.